| | Type | L # | Hits | Search Text | DBs | Time Stamp | Comments | Error Definition | Errors |
|---|---|---|---|---|---|---|---|---|---|
| 1 | BRS | L1 | 31 | ionic adj conjugate | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:17 | | | 0 |
| 2 | BRS | L2 | 10604 | inorganic adj particle | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:17 | | | 0 |
| 3 | BRS | L3 | 58594 | linker or (linking adj group) | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:18 | | | 0 |
| 4 | BRS | L4 | 368036 | macromolecule or polypeptide or protein | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:19 | | | 0 |
| 5 | BRS | L5 | 532209 | charged or ionizable | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:19 | | | 0 |
| 6 | BRS | L6 | 2 | 2 same 3 same 4 same 5 | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:21 | | | 0 |
| 7 | BRS | L7 | 2 | 1 same 2 | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:22 | | | 0 |
| 8 | BRS | L8 | 1 | (CdSe or ZnS) same 1 | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:23 | | | 0 |
| 9 | BRS | L9 | 64951 | semiconduct$3 adj (nanocrystal or material) | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:24 | | | 0 |
| 10 | BRS | L10 | 1 | 1 same 9 | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:25 | | | 0 |
| 11 | BRS | L11 | 5409674 | ag or au or phosphoer | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:25 | | | 0 |

| | Type | L # | Hits | Search Text | DBs | Time Stamp | Comments | Error Definition | Errors |
|---|---|---|---|---|---|---|---|---|---|
| 12 | BRS | L12 | 1 | 1 same 11 | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:26 | | | 0 |
| 13 | BRS | L13 | 3679 | leucine adj zipper | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:26 | | | 0 |
| 14 | BRS | L14 | 799 | polyaspartate | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:27 | | | 0 |
| 15 | BRS | L15 | 3501 | 4 same (13 or 14) | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:27 | | | 0 |
| 16 | BRS | L16 | 1 | 15 same 2 | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:27 | | | 0 |
| 17 | BRS | L17 | 2507 | maltose adj binding adj protein | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:28 | | | 0 |
| 18 | BRS | L18 | 4 | immunoglobulin adj g adj binding adj protein | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:28 | | | 0 |
| 19 | BRS | L19 | 1 | (17 or 18) same 2 | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:29 | | | 0 |
| 20 | BRS | L20 | 142 | anderson adj george.in. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:29 | | | 0 |
| 21 | BRS | L21 | 1 | mattoussi adj hedi.in. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:30 | | | 0 |
| 22 | BRS | L22 | 0 | mauro adj matthew.in. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:31 | | | 0 |

| | Type | L # | Hits | Search Text | DBs | Time Stamp | Comments | Error Definition | Errors |
|---|---|---|---|---|---|---|---|---|---|
| 23 | BRS | L25 | 27 | bawendi adj moungi.in. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:32 | | | 0 |
| 24 | BRS | L26 | 10 | sundar adj vikram.in. | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:33 | | | 0 |
| 25 | BRS | L27 | 1 | (20 or 21 or 25 or 26) and (2 or 1) | USPAT; US-PGPUB; EPO; JPO; DERWENT | 2003/08/05 11:34 | | | 0 |

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FILE 'MEDLINE' ENTERED AT 12:22:5[redacted]ON 05 AUG 2003

FILE 'CAPLUS' ENTERED AT 12:22:58 ON 05 AUG 2003
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FILE 'SCISEARCH' ENTERED AT 12:22:58 ON 05 AUG 2003
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FILE 'AGRICOLA' ENTERED AT 12:22:58 ON 05 AUG 2003

=> s ionic conjugate
L1          20 IONIC CONJUGATE

=> s inorganic particle
L2        4864 INORGANIC PARTICLE

=> s linker or (linking group)
L3       53551 LINKER OR (LINKING GROUP)

=> s macromolecule or polypeptide or protein
   4 FILES SEARCHED...
L4     7627914 MACROMOLECULE OR POLYPEPTIDE OR PROTEIN

=> s l2 (p) l3 (p) l4
L5           0 L2 (P) L3 (P) L4

=> s l1 (p) l2
L6           1 L1 (P) L2

=> d l6 1 ibib abs

L6   ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER:         2001:713679  CAPLUS
DOCUMENT NUMBER:          135:269662
TITLE:                    Inorganic particle conjugates
INVENTOR(S):              Mattoussi, Hedi; Anderson, George P.; Mauro, J.
                          Matthew; Bawendi, Moungi G.; Sundar, Vikram C.
PATENT ASSIGNEE(S):       Massachusetts Institute of Technology, USA; Naval
                          Research Laboratory
SOURCE:                   PCT Int. Appl., 48 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
     WO 2001071354      A2   20010927       WO 2001-US8788   20010320
     WO 2001071354      A3   20020801
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM,
             HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
             LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO,
             RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ,
             VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
             DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
             BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
     US 2002182632      A1   20021205       US 2001-811824   20010320
     EP 1266223         A2   20021218       EP 2001-924209   20010320
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
PRIORITY APPLN. INFO.:                    US 2000-190766P  P  20000320
                                          WO 2001-US8788   W  20010320
OTHER SOURCE(S):          MARPAT 135:269662
AB   The   ***ionic***     ***conjugates***   include an   ***inorg***   .
       ***particle***   electrostatically assocd. with a macromol. which can
```

interact specifically with predetd. chem. species or biol. targets.

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=> d his

     (FILE 'HOME' ENTERED AT 12:22:34 ON 05 AUG 2003)

     FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT
     12:22:58 ON 05 AUG 2003
L1            20 S IONIC CONJUGATE
L2          4864 S INORGANIC PARTICLE
L3         53551 S LINKER OR (LINKING GROUP)
L4       7627914 S MACROMOLECULE OR POLYPEPTIDE OR PROTEIN
L5             0 S L2 (P) L3 (P) L4
L6             1 S L1 (P) L2

=> s charged or ionizable
L7       303684 CHARGED OR IONIZABLE

=> s l4 (p) l7
L8        47688 L4 (P) L7

=> s l8 (p) l2
L9             7 L8 (P) L2

=> duplicate remove l9
DUPLICATE PREFERENCE IS 'CAPLUS, BIOSIS, SCISEARCH'
KEEP DUPLICATES FROM MORE THAN ONE FILE?  Y/(N):n
PROCESSING COMPLETED FOR L9
L10            6 DUPLICATE REMOVE L9 (1 DUPLICATE REMOVED)

=> s l10 not l6
L11            6 L10 NOT L6

=> d l11 1-6 ibib abs

L11  ANSWER 1 OF 6  CAPLUS  COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER:         2003:222711  CAPLUS
DOCUMENT NUMBER:          138:385857
TITLE:                    Layer-by-layer deposition and characterization of
                          hyperbranched poly(amidoamine)-grafted silica
                          nanoparticles and direct red 80
AUTHOR(S):                Park, Mi-Kyoung; Brookins, Bob; Blanton, Wally;
                          Colley, Richard; Tsubokawa, Norio; Advincula,
                          Rigoberto
CORPORATE SOURCE:         Department of Chemistry, University of Houston,
                          Houston, TX, 77204-5003, USA
SOURCE:                   Polymeric Materials Science and Engineering (2003),
                          88, 345-346
                          CODEN: PMSEDG; ISSN: 0743-0515
PUBLISHER:                American Chemical Society
DOCUMENT TYPE:            Journal; (computer optical disk)
LANGUAGE:                 English
AB   Assembly of org.-inorg. nanostructure materials is an important,
     interesting and dynamic area of today's science.  It is important and
     interesting to examine the behavior of   ***charged***   small-mol. dyes
     as components for alternate assembly with nanoparticles.  Dendrimers are a
     novel class of well-defined   ***macromols***   . and perspective
     candidates for self-assembly films due to controlled mol. wt. building,
     controlled branching and versatility in modification of terminal groups.
     We have reported that hyperbranched poly(amidoamine) dendron can be grown
     from amino group on ultrafine silica, chitosan powder and carbon black
     surface using dendrimer synthesis methodol.  Novel poly(amidoamine)-
     grafted   ***inorg***   .   ***particles***   can be incorporated into the
     org.-inorg. nanostructures via the LbL method.  In this paper, we have
     reported the primary investigation of the layer-by-layer deposition of
     PAMAM-grafted silica nanoparticles with low mol. wt. dye, DR80.  We have
     prepd. the LbL films of two different generations of PAMAM-grafted silica
     particles and compared the properties of the films.  The LbL nanocomposite
     films have been characterized by UV-vis, ellipsometry, and at. force
     microscopy (AFM).  Results suggest that the growth of PAA/PAMAM-grafted
     silica nanoparticles LbL films occurred via lateral expansion deposition
     mode.
REFERENCE COUNT:          9     THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS
                                RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11  ANSWER 2 OF 6  CAPLUS  COPYRIGHT 2003 ACS on STN
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ACCESSION NUMBER: 2003:186004 CAPLUS
TITLE: Layer-by-layer deposition and characterization of hyperbranched poly(amidoamine)-grafted silica nanoparticles and Direct Red 80
AUTHOR(S): Park, Mi-Kyoung; Brookins, Bob; Blanton, Wally; Colley, Richard; Tsubokawa, Norio; Advincula, Rigoberto
CORPORATE SOURCE: Department of Chemistry, University of Houston, Houston, TX, 77204, USA
SOURCE: Abstracts of Papers, 225th ACS National Meeting, New Orleans, LA, United States, March 23-27, 2003 (2003), PMSE-207. American Chemical Society: Washington, D. C.
CODEN: 69DSA4
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English
AB Assembly of org.-inorg. nanostructure materials is an important, interesting and dynamic area of today's science. It is important and interesting to examine the behavior of ***charged*** small-mol. dyes as components for alternate assembly with nanoparticles. Dendrimers are a novel class of well-defined ***macromols*** . and perspective candidates for self-assembly films due to controlled mol. wt. building, controlled branching and versatility in modification of terminal groups. We have reported that hyperbranched poly(amidoamine) dendron can be grown from amino group on ultrafine silica, chitosan powder and carbon black surface using dendrimer synthesis methodol. Novel poly(amidoamine)-grafted ***inorg*** . ***particles*** can be incorporated into the org.-inorg. nanostructures via the LbL method. In this paper, we have reported the primary investigation of the layer-by-layer deposition of PAMAM-grafted silica nanoparticles with low mol. wt. dye, DR80. We have prepd. the LbL films of two different generations of PAMAM-grafted silica particles and compared the properties of the films. The LbL nanocomposite films have been characterized by UV-vis, ellipsometry, and at. force microscopy (AFM). Results suggest that the growth of PAA/PAMAM-grafted silica nanoparticles LbL films occurred via lateral expansion deposition mode.

L11 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:187969 CAPLUS
TITLE: Intelligent polymer micro- and nanosized capsules
AUTHOR(S): Sukhorukov, Gleb B.
CORPORATE SOURCE: Max Planck Institute of Colloids and Interfaces, Capsulution NanoScience AG, Golm/Potsdam, 14424, Germany
SOURCE: Abstracts of Papers, 223rd ACS National Meeting, Orlando, FL, United States, April 7-11, 2002 (2002), COLL-051. American Chemical Society: Washington, D. C.
CODEN: 69CKQP
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English
AB This work is devoted to recently introduced novel polymeric films with spherical 3-dimensional topol. These films are fabricated by assembling of polymers on colloidal particles with sequential removal of colloidal core. Different templates, such as org. and inorg. colloid particles, ***protein*** aggregates, biol. cells and drug crystals can be used as cores to assemble multilayer film. The size of the cores may range from 50nm to tens of microns. Shells can be fabricated from a variety of compds. such as ***charged*** and non- ***charged*** polymers, biopolymers, lipids, multivalent dyes and inorg. nanoparticles. The permeability through the shell and release of the encapsulated materials can be controlled and modified by pH, ionic strength and solvents. By modification of shell interior the physico-chem. reactions, like dye pptn., enzymic reactions, ***inorg*** . ***particle*** synthesis are performed in confined geometry of the capsules. These polymer capsules are supposed to find applications in biotechnol., catalysis and food industry.

L11 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:708282 CAPLUS
DOCUMENT NUMBER: 135:326755
TITLE: Development of polyelectrolyte multilayer films and their applications to analytical chemistry (review)
AUTHOR(S): Anzai, Jun-Ichi
CORPORATE SOURCE: Graduate School of Pharmaceutical Sciences, Tohoku University, Sendai, 980-8578, Japan
SOURCE: Bunseki Kagaku (2001), 50(9), 585-594

CODEN: BNSKAK; ISSN: 0525-1931
PUBLISHER: Nippon Bunseki Kagakkai
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese

AB A review. The development of polyelectrolyte multilayer films (PEM) is reviewed in relation to their applications to anal. chem. PEMs are constructed by a layer-by-layer deposition of oppositely ***charged*** polyelectrolytes on a solid surface from aq. solns. The PEM films are formed through an electrostatic force of attraction between polycation and polyanion. The structure of PEM films depends significantly on the properties of the bathing soln., including the concn. of polyelectrolytes, ionic strength, and pH. High ionic strength solns. usually result in thicker film. Hydrogen bonding and hydrophobic interactions also play a role as a secondary force in addn. to the electrostatic interactions. Functional PEMs were prepd. using ***charged*** dyes, metal and ***inorg*** . ***particles*** , DNA, ***proteins*** , and virus. Anal. applications of PEM include coating the inner wall of capillaries for electrophoretic sepn., pervaporation films for alc./water purifn., sensitive layers of gas and humidity sensors, surface modification of functional electrodes, and ion-sensitive PEMs for optical ion sensors. ***Protein*** -contg. PEMs are finding wide applications to immuno sensors, enzyme sensors, bioreactors, and bio-fuel cells, in which ***proteins*** are still active in the PEM films.

L11 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:33807 CAPLUS
DOCUMENT NUMBER: 130:158175
TITLE: Automatic determination of coagulation-flocculation reagents dose
AUTHOR(S): Chilarescu, I. C.; Berevoianu, C.; Sandu, M.; Racoviteanu, G.
CORPORATE SOURCE: Civil Engineering, Lecturer Technical University, Bucharest, RO-72302, Rom.
SOURCE: Chemical Water and Wastewater Treatment V, Proceedings of the Gothenburg Symposium, 8th, Prague, Sept. 7-9, 1998 (1998), 71-81. Editor(s): Hahn, Hermann H.; Hoffmann, Erhard; Oedegaard, Hallvard. Springer: Berlin, Germany.
CODEN: 67ENAE
DOCUMENT TYPE: Conference
LANGUAGE: English

AB The flocculant dosage required for treating surface water by adsorption coagulation with charge neutralization is strongly detd. by the neg. charge concn. of the raw water, which is the sum of the neg. surface charge of ***inorg*** . ***particles*** , org. particles and naturally occurring dissolved ***macromol*** . orgs. (provided that these carry deprotonizable functional groups). At the Rosu Pilot Plant, the raw water experiences rapid and strong changes in quality. Whenever the quality of raw water changes, coagulation processes need to be adapted accordingly. In order to det. the dose of coagulant, the charge of the water is detd. by titrn. using a streaming current detector (SCD). The use of aluminum hydroxy complexes for a titrimetric detn. of the charge concn. results in a titrn. curve. There is a stoichiometric relationship between the neg. charge concn. of the raw water and the consumption of pos. ***charged*** polyelectrolytes or metal hydroxy complexes dosed for charge neutralization. The inflection point of the titrn. curve represents the optimum coagulant dose. Since the position of the inflection point is strongly influenced by the compn. of the raw water, rapid changes in raw water quality will change this position, making it necessary to change the coagulant dose. The SCD, used as an independent device, will give satisfactory results if the set point is correctly established. If, however, factors such as temp., pH, and water quality characteristics change, the set point value may need to be readjusted. This is often not practical under normal operating conditions. This paper describes the use of an Automatic Charge Titrn. Device (ACTD) designed by the authors. The advantage of the new device is that it dets. the charge concn. repeatedly, with no need for periodic calibration or readjustment of the set point value. The position of the inflection point is calcd. by computer, which commands and controls the titrn. process, and the resulting optimum dose is transmitted online to the dosing pumps in the pilot station. The ACTD is very efficient, esp. when raw water quality changes rapidly, and this is reflected in the treated water quality. The use of ACTD has great economic, health and ecol. advantages over traditional methods.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 6 OF 6 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1987:172838 BIOSIS
DOCUMENT NUMBER: BA83:91279
TITLE: THE ADDITION OF CALCIUM TO REDUCE THE IMPAIRMENT OF FLOCCULATION BY ALGOGENIC ORGANIC MATTER.
AUTHOR(S): BERNHARDT H; LUESSE B; HOYER O
CORPORATE SOURCE: WAHNBACH RESERVOIR ASSOCIATION, P.O. BOX 27, D-5200 SIEGBURG.
SOURCE: Z WASSER- ABWASSER- FORSCH, (1986 (RECD 1987)) 19 (6), 219-228.
CODEN: ZWABAQ. ISSN: 0044-3727.
FILE SEGMENT: BA; OLD
LANGUAGE: English

AB The disturbance to flocculation caused by alogenic extracellular organic matter (EOM) is usually the result of two mechanisms: a) the flocculant cations (Fe3+ or Al3+ ions) react with the EOM to form polynuclear mixed ligand complexes and/or b) the EOM reacts with the hydrolytically formed trivalent metal hydroxo complexes and oxide hydroxides to yield surface complexes. With the help of flocculation tests, our investigations have shown that this disturbance can be largely eliminated by adding calcium ions to the water before flocculation (Fig. 1). A decisive role is played by the mass ratio Ca2+ ions: EOM (Fig. 2) and the pH during flocculation (Fig. 3). In addition, the investigations have shown that a disturbance to flocculation is not caused by EOM at weakly acidic pH values (5.5-6.5) although it does occur markedly at pH values > 6.5. The charge of the iron hydroxo complexes is responsible for this. Their isoelectric point (i.e.p.) lies at pH 6.2 in the model water used for the experiments and its position is dependent on the anionic composition of the water. It was demonstrated that the i.e.p. is shifted to a lower pH range by HCO3- ions (Fig. 4) similar to the effect already known for multivalent anions. Ca2+ and HCO3- influence the charge of the iron hydroxo complexes. By increasing the calcium ion concentration or decreasing the HCO3- ion concentration the positive charge of the iron hydroxo complexes increases even in the basic range when the ionic strength is kept constant. This is caused by the attachment of Ca2+ ions to the negatively ***charged*** polynuclear iron hydroxy complexes. Moreover, calcium ions promote the adsorption of negatively ***charged*** EOM ***macromolecules*** to negatively ***charged*** FeOOH surfaces and to negatively ***charged*** ***inorganic*** ***particles*** . In this way they improve the effectiveness of the flocculation with regard to the removal of ***macromolecules*** and particulate matter. Calcium ions neutralize the negative charge of the polymer anions and become bound as calcium EOM. This results in a reduction of the potential of the EOM to form complexes with the metal hydroxo complexes. The aggregates thus formed are easier to filter after flocculation, which is favourable for EOM removal. Positively ***charged*** iron hydroxo complexes are also capable of counteracting the disturbance caused by EOM to flocculation. They are present when flocculation is carried out at a pH value below that of the i.e.p. (Figs. 8, 11). The mechanisms responsible for this situation are discussed. The investigations have also shown that the pH value of the water exerts a great influence on the conformation of the extracellular polymer molecules. The flocculation process is also decisively influenced by the conformation of the EOM (Figs. 5, 6). Thus, by changing the conformation of the EOM in a favourable way, Ca2+ ions are also able to prevent a flocculation disturbance.

```
=> d his

     (FILE 'HOME' ENTERED AT 12:22:34 ON 05 AUG 2003)

     FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT
     12:22:58 ON 05 AUG 2003
L1            20 S IONIC CONJUGATE
L2          4864 S INORGANIC PARTICLE
L3         53551 S LINKER OR (LINKING GROUP)
L4       7627914 S MACROMOLECULE OR POLYPEPTIDE OR PROTEIN
L5             0 S L2 (P) L3 (P) L4
L6             1 S L1 (P) L2
L7        303684 S CHARGED OR IONIZABLE
L8         47688 S L4 (P) L7
L9             7 S L8 (P) L2
L10            6 DUPLICATE REMOVE L9 (1 DUPLICATE REMOVED)
L11            6 S L10 NOT L6

=> s cdse or zns
L12       42264 CDSE OR ZNS
```

```
=> s semiconduct? (w) (nanocrystal or material)
L13      81471 SEMICONDUCT? (W) (NANOCRYSTAL OR MATERIAL)

=> s l12 (p) l13
L14        530 L12 (P) L13

=> s l14 (p) l4 (p) l3
L15          0 L14 (P) L4 (P) L3

=> s l14 (p) l4
L16          8 L14 (P) L4

=> duplicate remove l16
DUPLICATE PREFERENCE IS 'CAPLUS, BIOSIS, SCISEARCH'
KEEP DUPLICATES FROM MORE THAN ONE FILE?  Y/(N):n
PROCESSING COMPLETED FOR L16
L17            7 DUPLICATE REMOVE L16 (1 DUPLICATE REMOVED)

=> s l17 not (l11 or l6)
L18          7 L17 NOT (L11 OR L6)

=> d l18 1-7 ibib abs

L18  ANSWER 1 OF 7  CAPLUS  COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER:        2003:185763  CAPLUS
TITLE:                   Fluorescent nanocrystal probes for cell surface
                         receptors
AUTHOR(S):               Rosenthal, Sandra J.; Tomlinson, Ian; Burton, Jon;
                         Grey, Jesse; Mason, Jon; Gresch, Paul; Sanders-Bush,
                         Elaine; DeFelice, Lou; Blakely, Randy
CORPORATE SOURCE:        Department of Chemistry, Vanderbilt University,
                         Nashville, TN, 37235, USA
SOURCE:                  Abstracts of Papers, 225th ACS National Meeting, New
                         Orleans, LA, United States, March 23-27, 2003 (2003),
                         PHYS-491.  American Chemical Society: Washington, D.
                         C.
                         CODEN: 69DSA4
DOCUMENT TYPE:           Conference; Meeting Abstract
LANGUAGE:                English
AB   The simultaneous localization of several different   ***proteins***   in
     situ is currently limited by the wide emission spectra and low
     photostabilities of fluorescent dyes traditionally used to study cell
     surface receptors, ion channels, and transporters.  An alternative reagent
     that can be customized to overcome these limitations are core (
       ***CdSe***  )/shell(  ***ZnS***  )   ***semiconductor***
       ***nanocrystals***  (NC).  We have explored the use of
     serotonin-conjugated nanocrystals (SNACs) to target serotonin (5HT)
     transporters (SERTs) as one example of their biol. utility.  In contrast
     to a lack of labeling in parental HEK-293 cells by SNACs, SERTs in stably
     transfected cells were labeled by SNACs in an antidepressant-sensitive
     manner.  We have further demonstrated the selective interaction of SNACs
     with SERT by blocking the uptake of tritiated 5HT.  In a second
     demonstration we have developed ligand-conjugated nanocrystals to target
     the 5HT2A receptor and have selectively labeled this   ***protein***   at
     the surface of cells in fluorescence labeling expts.  This
     ligand-conjugation strategy has also been extended to the dopamine
     transporter.  In a modification of this strategy we have conjugated
     antibodies to the nanocrystals and imaged cell surface receptors and
     transporters in living neurons.  The development of these probes enables
     trafficking studies of these   ***proteins***  .

L18  ANSWER 2 OF 7  CAPLUS  COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER:        2002:922587  CAPLUS
DOCUMENT NUMBER:         138:178751
TITLE:                   Conformation Ordered nanoparticle arrays formed on
                         engineered chaperonin protein templates
AUTHOR(S):               McMillan, R. Andrew; Paavola, Chad D.; Howard, Jeanie;
                         Chan, Suzanne L.; Zaluzec, Nestor J.; Trent, Jonathan
                         D.
CORPORATE SOURCE:        NASA Ames Research Center, Center for Nanotechnology
                         and Astrobiology Technology Branch, Moffett Field, CA,
                         94035, USA
SOURCE:                  Nature Materials (2002), 1(4), 247-252
                         CODEN: NMAACR; ISSN: 1476-1122
PUBLISHER:               Nature Publishing Group
DOCUMENT TYPE:           Journal
```

LANGUAGE: English
AB Traditional methods for fabricating nanoscale arrays are usually based on lithog. techniques. Alternative new approaches rely on the use of nanoscale templates made of synthetic or biol. materials. Some proteins, for example, have been used to form ordered two-dimensional arrays. Here, we fabricated nanoscale ordered arrays of metal and semiconductor quantum dots by binding preformed nanoparticles onto cryst. protein templates made from genetically engineered hollow double-ring structures called chaperonins. Using structural information as a guide, a thermostable recombinant chaperonin subunit was modified to assemble into chaperonins with either 3 nm or 9 nm apical pores surrounded by chem. reactive thiols. These engineered chaperonins were crystd. into two-dimensional templates up to 20 .mu.m in diam. The periodic solvent-exposed thiols within these cryst. templates were used to size-selectively bind and organize either gold (1.4, 5 or 10nm) or CdSe-ZnS semiconductor (4.5 nm) quantum dots into arrays. The order within the arrays was defined by the lattice of the underlying protein crystal. By combining the self-assembling properties of chaperonins with mutations guided by structural modeling, we demonstrate that quantum dots can be manipulated using modified chaperonins and organized into arrays for use in next-generation electronic and photonic devices.
REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:602894 CAPLUS
DOCUMENT NUMBER: 137:330575
TITLE: Quenching phenomena in water-soluble CdSe/ZnS quantum dots
AUTHOR(S): Speckman, D. M.; Jennings, T. L.; LaLumondiere, S. D.; Moss, S. C.
CORPORATE SOURCE: The Aerospace Corporation, Los Angeles, CA, 90009, USA
SOURCE: Materials Research Society Symposium Proceedings (2002), 704(Nanoparticulate Materials), 269-274
CODEN: MRSPDH; ISSN: 0272-9172
PUBLISHER: Materials Research Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB ***Semiconductor*** ***nanocrystals*** are expected to play an important role in the development of novel electronic and optoelectronic devices, and have already shown promise in the area of biol. reporters for medical screening and sensor applications. We have been involved in developing luminescent ***CdSe*** / ***ZnS*** core-shell nanocrystals (or quantum dots, QDs) for use in self-assembled structures and as fluorescent reporters in immunoassay-based biodetectors. As part of our efforts to bind semiconductor ***CdSe*** / ***ZnS*** quantum dots to antibody ***proteins*** for our immunoassay work, we functionalized the nanocrystal surfaces with a variety of org. acid salts to impart water soly. to the nanocrystals. During the course of working with these derivatized, water-sol. quantum dots, we obsd. significant differences in their chem. reactivities and phys. characteristics compared to those of underivatized ***CdSe*** / ***ZnS*** nanocrystals. One of the most striking differences obsd. is the reactivity of the derivatized and underivatized nanocrystals with stainless steel surfaces. The fluorescence of aq. mixts. of our water-sol. nanocrystals is immediately quenched upon exposure of the mixts. to stainless steel (SS) surfaces or to chromium oxide, whereas underivatized quantum dots exhibit little or no reactivity at all. As has been reported by several other labs., the water-sol. nanocrystals also exhibit significantly lower quantum yields compared to the underivatized nanocrystals. We discuss the unusual reactivity exhibited by these nanocrystals, and suggest possible explanations for their interesting chem. behavior. We also describe methods to prevent the quenching of water-sol. derivatized quantum dots by stainless steel and metal oxides.
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:211739 CAPLUS
DOCUMENT NUMBER: 134:333943
TITLE: Bioconjugation of highly luminescent colloidal CdSe-ZnS quantum dots with an engineered two-domain recombinant protein
AUTHOR(S): Mattoussi, H.; Mauro, J. M.; Goldman, E. R.; Green, T. M.; Anderson, G. P.; Sundar, V. C.; Bawendi, M. G.
CORPORATE SOURCE: Optical Sciences Division, United States Naval Research Laboratory, Washington, DC, 20375, USA

SOURCE: Physica Status Solidi B: Basic Research (2001), 224(1), 277-283
CODEN: PSSBBD; ISSN: 0370-1972
PUBLISHER: Wiley-VCH Verlag Berlin GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors present a novel approach, based on mol. self-assembly driven by electrostatic attractions, for conjugating inorg. colloidal ***semiconductor*** ***nanocrystals*** (quantum dots: QDs) having neg. charged surfaces with a 2-domain recombinant ***protein*** bearing a pos. charged C-terminal leucine zipper domain. Aggregation-free QD/ ***protein*** conjugate dispersions were prepd. Conjugates retain both properties of the starting materials, i.e., biol. activity of the ***protein*** and spectroscopic characteristics of the QDs. Such hybrid bio-inorg. conjugates represent a powerful fluorescent tracking tool, because they combine advantages of ***CdSe*** - ***ZnS*** quantum dots, such as chem. stability and a wide range of size-dependent luminescence emission properties, with a straightforward electrostatic conjugation approach. The authors describe the design and prepn. of a model QD/ ***protein*** conjugate and present functional characterization of the conjugate using luminescence and bioassays.
REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:334569 CAPLUS
TITLE: Preparations of semiconductor nanocrystal-polystyrene hybrid materials.
AUTHOR(S): Erskine, Lael L.; Emrick, Todd; Alivisatos, A. Paul; Frechet, Jean M. J.
CORPORATE SOURCE: Department of Chemistry, University of California, Berkeley, CA, 94720, USA
SOURCE: Book of Abstracts, 219th ACS National Meeting, San Francisco, CA, March 26-30, 2000 (2000), POLY-387. American Chemical Society: Washington, D. C.
CODEN: 69CLAC
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English
AB The prepn. of hybrid materials composed of inorg. particles and org. ***macromols*** . is relevant to many areas of materials science, including conductive and optoelectronic materials. We are interested in materials that combine the features of ***semiconductor*** ***nanocrystals*** and org. ***macromols*** . for evaluation of their properties. In particular, we have studied 4-thiomethyl styrene for its dual role as a capping ligand and polymerizable moiety in conjunction with ***CdSe*** ***semiconductor*** ***nanocrystals*** . Several approaches to the prepn. of such nanocrystal-polymer hybrids will be presented.

L18 ANSWER 6 OF 7 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2001:134684 BIOSIS
DOCUMENT NUMBER: PREV200100134684
TITLE: Ligand-conjugated nanocrystals: targeting and visualization of membrane proteins in situ.
AUTHOR(S): Rosenthal, S. J. (1); Schroeter, S.; Adkins, E. M.; Tomlinson, I.; Swafford, L.; Ramsey, S.; Adams, S.; DeFelice, L. J.; Blakely, R. D.
CORPORATE SOURCE: (1) Vanderbilt Univ., Nashville, TN USA
SOURCE: Society for Neuroscience Abstracts, (2000) Vol. 26, No. 1-2, pp. Abstract No.-819.3. print.
Meeting Info.: 30th Annual Meeting of the Society of Neuroscience New Orleans, LA, USA November 04-09, 2000 Society for Neuroscience
. ISSN: 0190-5295.
DOCUMENT TYPE: Conference
LANGUAGE: English
SUMMARY LANGUAGE: English
AB The simultaneous localization of several different ***proteins*** in situ is currently limited by the wide emission spectra and low photostabilities of fluorescent dyes traditionally used to study cell surface receptors, ion channels, and transporters. An alternative reagent that can be customized to overcome these limitations is the core ( ***CdSe*** )/shell( ***ZnS*** ) ***semiconducting*** ***nanocrystal*** (NC). Through quantum confinement, the fluorescent wavelength of NCs are continuously tunable by size: e.g.25A NCs emit at 455 nm while 60A NCs emit at 625 nm. Unlike dye molecules and variants of green fluorescent ***protein*** , NCs have narrow, gaussian emission

spectra enabling multiplex imaging. The absorption of the NCs is continuous above the band-gap hence all sizes of NCs can be excited with a single excitation wavelength. In addition, NCs are extraordinarily bright, even after hours of continuous illumination. We explored the use of ligand-conjugated nanocrystals to target serotonin (5HT) transporters (SERTs) as one example of their biological utility. In contrast to a lack of labeling in parental HEK-293 cells by SNaCs, SERTs in stably transfected cells were labeled by SNaCs in an antidepressant-sensitive manner. We have further demonstrated the selective interaction of SNaCs with SERT by blocking the uptake of tritiated 5HT. The Ki values were similar to that of underivatized 5HT. We are also investigating whether SERTs in 5HT midbrain neurons cultured from rat embryos can be imaged with SNaCs or antagonist-conjugated NCs and whether these reagents can modulate currents associated with serotonin receptors or SERTs expressed in Xenopus oocytes.

L18 ANSWER 7 OF 7 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN
ACCESSION NUMBER: 2003:371692 SCISEARCH
THE GENUINE ARTICLE: 671HJ
TITLE: Refractive index of transparent nanoparticle films measured by surface plasmon microscopy
AUTHOR: Kotsev S N; Dushkin C D (Reprint); Ilev I K; Nagayama K
CORPORATE SOURCE: Univ Sofia, Lab Nanoparticle Sci & Technol, Dept Inorgan Chem, Fac Chem, Room 339, 1 James Boucher Blvd, BU-1126 Sofia, Bulgaria (Reprint); Univ Sofia, Lab Nanoparticle Sci & Technol, Dept Inorgan Chem, Fac Chem, BU-1126 Sofia, Bulgaria; Temple Univ, Dept Phys, Philadelphia, PA 19122 USA; US FDA, CDRH, Electro Opt Branch, Rockville, MD 20857 USA; Natl Inst Physiol Sci, Lab Ultrastruct Res, Dept Mol Physiol, Okazaki, Aichi 4448585, Japan
COUNTRY OF AUTHOR: Bulgaria; USA; Japan
SOURCE: COLLOID AND POLYMER SCIENCE, (APR 2003) Vol. 281, No. 4, pp. 343-352.
Publisher: SPRINGER-VERLAG, 175 FIFTH AVE, NEW YORK, NY 10010 USA.
ISSN: 0303-402X.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 72
*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS*

AB Nanometer thin films of latex spheres or ferritin macromolecules are deposited on silver substrate and their structure is studied by means of the surface plasmon resonance method. A homogeneous particle layer is spread in a circular paraffin cell tightly attached to a silver film on glass. Appropriate drying of the suspension in the presence of surfactant creates a monolayer and multilayer of ordered nanoparticles. The layers modulate the surface plasmon and, hence, the deep and narrow minimum in film reflectivity. Specially designed experimental setup views the illuminated film area by an optical microscope and measures the layer reflectivity as a function of the incident angle. The brightness of image, obtained at the angle of minimum reflectivity, depends on the thickness of particle layer. The reflectivity data are fitted regarding plane parallel layer of a complex refractive index and using theoretical equations that separate the real and imaginary parts. The calculated layer thickness and the real part of refractive index are in a reasonable agreement with those known for similar systems. The imaginary part of the refractive index depends on the structural defects of the nanoparticle layers.

=> d his

(FILE 'HOME' ENTERED AT 12:22:34 ON 05 AUG 2003)

FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT 12:22:58 ON 05 AUG 2003

| | | |
|---|---|---|
| L1 | 20 | S IONIC CONJUGATE |
| L2 | 4864 | S INORGANIC PARTICLE |
| L3 | 53551 | S LINKER OR (LINKING GROUP) |
| L4 | 7627914 | S MACROMOLECULE OR POLYPEPTIDE OR PROTEIN |
| L5 | 0 | S L2 (P) L3 (P) L4 |
| L6 | 1 | S L1 (P) L2 |
| L7 | 303684 | S CHARGED OR IONIZABLE |
| L8 | 47688 | S L4 (P) L7 |
| L9 | 7 | S L8 (P) L2 |
| L10 | 6 | DUPLICATE REMOVE L9 (1 DUPLICATE REMOVED) |
| L11 | 6 | S L10 NOT L6 |
| L12 | 42264 | S CDSE OR ZNS |

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L13       81471 S SEMICONDUCT? (W) (NANOCRYSTAL OR MATERIAL)
L14         530 S L12 (P) L13
L15           0 S L14 (P) L4 (P) L3
L16           8 S L14 (P) L4
L17           7 DUPLICATE REMOVE L16 (1 DUPLICATE REMOVED)
L18           7 S L17 NOT (L11 OR L6)

=> s ag or au or phospher
L19      736802 AG OR AU OR PHOSPHER

=> s l19 (p) l1
L20           1 L19 (P) L1

=> s l20 not l6
L21           1 L20 NOT L6

=> d l21 1 ibib abs

L21  ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER:         1961:38224  CAPLUS
DOCUMENT NUMBER:          55:38224
ORIGINAL REFERENCE NO.:   55:7496e-h
TITLE:                    Thermodynamic quantities for the dissociation
                          equilibria of biologically important compounds. VIII.
                          The first and second acid dissociations of arginine
AUTHOR(S):                Datta, S. P.; Grzybowski, A. K.
CORPORATE SOURCE:         Univ. Coll., London
SOURCE:                   Biochemical Journal (1961), 78, 289-97
                          CODEN: BIJOAK; ISSN: 0264-6021
DOCUMENT TYPE:            Journal
LANGUAGE:                 Unavailable
AB    cf. CA 52, 15204c.  The 1st and 2nd dissocn. consts. of arginine have been
      detd. at temp. (T) 0-55.degree. at 5.degree. intervals, from e.m.f.
      measurements of cells without liquid junction contg. H and   ***Ag***
      -AgCl electrodes.  The 1st dissocn. const. (pK1a) is equal to (1087.6/T) -
      4.7526 + 0.009189T; the 2nd dissocn. const (pK2a) is equal to (2643.6/T) -
      0.8783 + 0.003363 T.  The standard thermodynamic quantities, .DELTA.G0,
      .DELTA.H0, -.DELTA.S0 and - .DELTA.C0p, have been calcd.  The various
      factors which contribute to the differences between the 1st and 2nd
      dissocn. consts. of arginine and glycine (loc. cit., King, CA 45, 4532h)
      have been discussed.  It is concluded that the pK1a and pK2a values of
      arginine are lower, by a const. amt., than those of glycine, mainly
      because of the differences in the electrostatic interactions of the
      various   ***ionic***     ***conjugate***   acid-base pairs with the
      solvent H2O.


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     (FILE 'HOME' ENTERED AT 12:22:34 ON 05 AUG 2003)

     FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT
     12:22:58 ON 05 AUG 2003
L1           20 S IONIC CONJUGATE
L2         4864 S INORGANIC PARTICLE
L3        53551 S LINKER OR (LINKING GROUP)
L4      7627914 S MACROMOLECULE OR POLYPEPTIDE OR PROTEIN
L5            0 S L2 (P) L3 (P) L4
L6            1 S L1 (P) L2
L7       303684 S CHARGED OR IONIZABLE
L8        47688 S L4 (P) L7
L9            7 S L8 (P) L2
L10           6 DUPLICATE REMOVE L9 (1 DUPLICATE REMOVED)
L11           6 S L10 NOT L6
L12       42264 S CDSE OR ZNS
L13       81471 S SEMICONDUCT? (W) (NANOCRYSTAL OR MATERIAL)
L14         530 S L12 (P) L13
L15           0 S L14 (P) L4 (P) L3
L16           8 S L14 (P) L4
L17           7 DUPLICATE REMOVE L16 (1 DUPLICATE REMOVED)
L18           7 S L17 NOT (L11 OR L6)
L19      736802 S AG OR AU OR PHOSPHER
L20           1 S L19 (P) L1
L21           1 S L20 NOT L6

=> s l19 (p) l2
L22         109 L19 (P) L2
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=> s l12 (p) l3 (p) l4
L23           5 L12 (P) L3 (P) L4

=> duplicate remove l23
DUPLICATE PREFERENCE IS 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH'
KEEP DUPLICATES FROM MORE THAN ONE FILE?  Y/(N):n
PROCESSING COMPLETED FOR L23
L24            1 DUPLICATE REMOVE L23 (4 DUPLICATES REMOVED)

=> s l24 not l6
L25            1 L24 NOT L6

=> d l25 1 ibib abs

L25  ANSWER 1 OF 1     MEDLINE on STN
ACCESSION NUMBER:    2002263003     MEDLINE
DOCUMENT NUMBER:     21968607   PubMed ID: 11971705
TITLE:               Targeting cell surface receptors with ligand-conjugated
                     nanocrystals.
AUTHOR:              Rosenthal Sandra J; Tomlinson Ian; Adkins Erika M;
                     Schroeter Sally; Adams Scott; Swafford Laura; McBride
                     James; Wang Yongqiang; DeFelice Louis J; Blakely Randy D
CORPORATE SOURCE:    Department of Chemistry, Vanderbilt University School of
                     Medicine, Vanderbilt University, Nashville, Tennessee
                     37235, USA.
CONTRACT NUMBER:     5RO3MH61874-02 (NIMH)
     DA07390 (NIDA)
     MH12399 (NIMH)
     NS-34075 (NINDS)
SOURCE:              JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, (2002 May 1) 124
                     (17) 4586-94.
                     Journal code: 7503056. ISSN: 0002-7863.
PUB. COUNTRY:        United States
DOCUMENT TYPE:       Journal; Article; (JOURNAL ARTICLE)
LANGUAGE:            English
FILE SEGMENT:        Priority Journals
ENTRY MONTH:         200207
ENTRY DATE:          Entered STN: 20020511
                     Last Updated on STN: 20020724
                     Entered Medline: 20020723
AB   To explore the potential for use of ligand-conjugated nanocrystals to
     target cell surface receptors, ion channels, and transporters, we explored
     the ability of serotonin-labeled   ***CdSe***   nanocrystals (SNACs) to
     interact with antidepressant-sensitive, human and Drosophila serotonin
     transporters (hSERT, dSERT) expressed in HeLa and HEK-293 cells.  Unlike
     unconjugated nanocrystals, SNACs were found to dose-dependently inhibit
     transport of radiolabeled serotonin by hSERT and dSERT, with an estimated
     half-maximal activity (EC(50)) of 33 (dSERT) and 99 microM (hSERT).  When
     serotonin was conjugated to the nanocrystal through a   ***linker***   arm
     (LSNACs), the EC(50) for hSERT was determined to be 115 microM.
     Electrophysiology measurements indicated that LSNACs did not elicit
     currents from the serotonin-3 (5HT(3)) receptor but did produce currents
     when exposed to the transporter, which are similar to those elicited by
     antagonists.  Moreover, fluorescent LSNACs were found to label
     SERT-transfected cells but did not label either nontransfected cells or
     transfected cells coincubated with the high-affinity SERT antagonist
     paroxetine.  These findings support further consideration of
     ligand-conjugated nanocrystals as versatile probes of membrane
       ***proteins***   in living cells.


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     (FILE 'HOME' ENTERED AT 12:22:34 ON 05 AUG 2003)

     FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT
     12:22:58 ON 05 AUG 2003
L1            20 S IONIC CONJUGATE
L2          4864 S INORGANIC PARTICLE
L3         53551 S LINKER OR (LINKING GROUP)
L4       7627914 S MACROMOLECULE OR POLYPEPTIDE OR PROTEIN
L5             0 S L2 (P) L3 (P) L4
L6             1 S L1 (P) L2
L7        303684 S CHARGED OR IONIZABLE
L8         47688 S L4 (P) L7
L9             7 S L8 (P) L2
```

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L10           6 DUPLICATE REMOVE    (1 DUPLICATE REMOVED)
L11           6 S L10 NOT L6
L12       42264 S CDSE OR ZNS
L13       81471 S SEMICONDUCT? (W) (NANOCRYSTAL OR MATERIAL)
L14         530 S L12 (P) L13
L15           0 S L14 (P) L4 (P) L3
L16           8 S L14 (P) L4
L17           7 DUPLICATE REMOVE L16 (1 DUPLICATE REMOVED)
L18           7 S L17 NOT (L11 OR L6)
L19      736802 S AG OR AU OR PHOSPHER
L20           1 S L19 (P) L1
L21           1 S L20 NOT L6
L22         109 S L19 (P) L2
L23           5 S L12 (P) L3 (P) L4
L24           1 DUPLICATE REMOVE L23 (4 DUPLICATES REMOVED)
L25           1 S L24 NOT L6

=> s leucine zipper
L26       17208 LEUCINE ZIPPER

=> s polyaspartate
L27         742 POLYASPARTATE

=> s (l26 or l27) (p) l4
L28       14445 (L26 OR L27) (P) L4

=> s l28 (p) l2
L29           1 L28 (P) L2

=> d l29 1 ibib abs

L29  ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER:         2001:713679  CAPLUS
DOCUMENT NUMBER:          135:269662
TITLE:                    Inorganic particle conjugates
INVENTOR(S):              Mattoussi, Hedi; Anderson, George P.; Mauro, J.
                          Matthew; Bawendi, Moungi G.; Sundar, Vikram C.
PATENT ASSIGNEE(S):       Massachusetts Institute of Technology, USA; Naval
                          Research Laboratory
SOURCE:                   PCT Int. Appl., 48 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.   DATE
     ---------------   ----  --------       ---------------   --------
     WO 2001071354      A2   20010927       WO 2001-US8788    20010320
     WO 2001071354      A3   20020801
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM,
             HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
             LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO,
             RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ,
             VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
             DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
             BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
     US 2002182632      A1   20021205       US 2001-811824    20010320
     EP 1266223         A2   20021218       EP 2001-924209    20010320
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
PRIORITY APPLN. INFO.:                    US 2000-190766P   P  20000320
                                          WO 2001-US8788    W  20010320
OTHER SOURCE(S):          MARPAT 135:269662
AB   The ionic conjugates include an inorg. particle electrostatically assocd.
     with a macromol. which can interact specifically with predetd. chem.
     species or biol. targets.


=> d his

     (FILE 'HOME' ENTERED AT 12:22:34 ON 05 AUG 2003)

     FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT
     12:22:58 ON 05 AUG 2003
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L1           20 S IONIC CONJUGATE
L2         4864 S INORGANIC PARTICLE
L3        53551 S LINKER OR (LINKING GROUP)
L4      7627914 S MACROMOLECULE OR POLYPEPTIDE OR PROTEIN
L5            0 S L2 (P) L3 (P) L4
L6            1 S L1 (P) L2
L7       303684 S CHARGED OR IONIZABLE
L8        47688 S L4 (P) L7
L9            7 S L8 (P) L2
L10           6 DUPLICATE REMOVE L9 (1 DUPLICATE REMOVED)
L11           6 S L10 NOT L6
L12       42264 S CDSE OR ZNS
L13       81471 S SEMICONDUCT? (W) (NANOCRYSTAL OR MATERIAL)
L14         530 S L12 (P) L13
L15           0 S L14 (P) L4 (P) L3
L16           8 S L14 (P) L4
L17           7 DUPLICATE REMOVE L16 (1 DUPLICATE REMOVED)
L18           7 S L17 NOT (L11 OR L6)
L19      736802 S AG OR AU OR PHOSPHER
L20           1 S L19 (P) L1
L21           1 S L20 NOT L6
L22         109 S L19 (P) L2
L23           5 S L12 (P) L3 (P) L4
L24           1 DUPLICATE REMOVE L23 (4 DUPLICATES REMOVED)
L25           1 S L24 NOT L6
L26       17208 S LEUCINE ZIPPER
L27         742 S POLYASPARTATE
L28       14445 S (L26 OR L27) (P) L4
L29           1 S L28 (P) L2

=> s maltose binding protein
L30       7206 MALTOSE BINDING PROTEIN

=> s immunoglobulin g binding protein
L31        110 IMMUNOGLOBULIN G BINDING PROTEIN

=> s (l30 or l31) (p) l2 (p) l3
L32           0 (L30 OR L31) (P) L2 (P) L3

=> s bawendi moungi/au
L33          11 BAWENDI MOUNGI/AU

=> s sundar vikram/au
L34           0 SUNDAR VIKRAM/AU

=> s anderson george/au
L35          42 ANDERSON GEORGE/AU

=> s mattoussi hedi/au
L36          42 MATTOUSSI HEDI/AU

=> s mauro matthew/au
L37           3 MAURO MATTHEW/AU

=> s (l33 or l35 or l36 or l37) and (l1 or l2)
L38           1 (L33 OR L35 OR L36 OR L37) AND (L1 OR L2)

=> s l38 not l6
L39           0 L38 NOT L6

=> d his

     (FILE 'HOME' ENTERED AT 12:22:34 ON 05 AUG 2003)

     FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT
     12:22:58 ON 05 AUG 2003
L1           20 S IONIC CONJUGATE
L2         4864 S INORGANIC PARTICLE
L3        53551 S LINKER OR (LINKING GROUP)
L4      7627914 S MACROMOLECULE OR POLYPEPTIDE OR PROTEIN
L5            0 S L2 (P) L3 (P) L4
L6            1 S L1 (P) L2
L7       303684 S CHARGED OR IONIZABLE
L8        47688 S L4 (P) L7
L9            7 S L8 (P) L2
L10           6 DUPLICATE REMOVE L9 (1 DUPLICATE REMOVED)
L11           6 S L10 NOT L6
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L12       42264 S CDSE OR ZNS
L13       81471 S SEMICONDUCT? (W)(NANOCRYSTAL OR MATERIAL)
L14         530 S L12 (P) L13
L15           0 S L14 (P) L4 (P) L3
L16           8 S L14 (P) L4
L17           7 DUPLICATE REMOVE L16 (1 DUPLICATE REMOVED)
L18           7 S L17 NOT (L11 OR L6)
L19      736802 S AG OR AU OR PHOSPHER
L20           1 S L19 (P) L1
L21           1 S L20 NOT L6
L22         109 S L19 (P) L2
L23           5 S L12 (P) L3 (P) L4
L24           1 DUPLICATE REMOVE L23 (4 DUPLICATES REMOVED)
L25           1 S L24 NOT L6
L26       17208 S LEUCINE ZIPPER
L27         742 S POLYASPARTATE
L28       14445 S (L26 OR L27) (P) L4
L29           1 S L28 (P) L2
L30        7206 S MALTOSE BINDING PROTEIN
L31         110 S IMMUNOGLOBULIN G BINDING PROTEIN
L32           0 S (L30 OR L31) (P) L2 (P) L3
L33          11 S BAWENDI MOUNGI/AU
L34           0 S SUNDAR VIKRAM/AU
L35          42 S ANDERSON GEORGE/AU
L36          42 S MATTOUSSI HEDI/AU
L37           3 S MAURO MATTHEW/AU
L38           1 S (L33 OR L35 OR L36 OR L37) AND (L1 OR L2)
L39           0 S L38 NOT L6

=> log y
COST IN U.S. DOLLARS                            SINCE FILE      TOTAL
                                                   ENTRY    SESSION
FULL ESTIMATED COST                                121.92     122.13

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)      SINCE FILE      TOTAL
                                                   ENTRY    SESSION
CA SUBSCRIBER PRICE                                -8.46      -8.46

STN INTERNATIONAL LOGOFF AT 12:38:18 ON 05 AUG 2003
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